

ABSTRACT OF THE INVENTION

In methods for screening treatments for, and treatment of, neurodegenerative diseases, aggregation in neurons of NACP/ α -synuclein is measured and expression of a non-amyloidogenic protein is stimulated

5 in order to reduce the level aggregation. For purposes of screening agents for treatment of neurodegenerative disease, oxidative stress in the neuronal cells is stimulated by introducing a mixture of metal-ions and hydrogen peroxide. Examples of appropriate metals include iron, aluminum, and copper. After introduction of the agent under evaluation

10 for stimulation of expression of non-amyloidogenic protein, the effectiveness is measured by testing for a decrease in the level of aggregation of NACP/ α -synuclein. In an exemplary embodiment, the non-amyloidogenic protein is β -synuclein. The aggregation of NACP/ α -synuclein is dependent upon the concentration of metal ions in the

15 neuronal cells. In addition, the presence of chelating agents appears to modulate the build-up of NACP/ α -synuclein aggregates which are responsible for synaptic and neuronal dysfunction.